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METHOD INTENDED TO OBTAIN REFLECTION TRAVEL TIMES FROM AN INTERPRETATION OF MIGRATED CYLINDRICAL WAVE SEISMIC DATA

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ABSTRACT

- Method intended to obtain reflection travel times from an interpretation of seismic data in migrated cylindrical waves, for a given value of the parameter defining the slope of these waves, or the superposition of such data associated with various substantially parallel acquisition lines, this parameter possibly taking successively several values.

- The method comprises the following stages : a) defining a slowness vector ($\bar{p}$) whose component (p_x) in a direction parallel to the acquisition lines defines the slope of the cylindrical wave ; b) for a given position of a seismic receiver of abscissa (x_R) on an acquisition line, seeking abscissa (ξ) of the source such that a ray starting from the seismic receiver and reflecting on a picked event emerges at the source on the acquisition line considered, with a slowness vector ($\bar{p}$) whose component in the direction parallel to the acquisition lines is ($-p_x$) ; c) determining a travel time ($t^e (x_R)$) by adding to the value of the travel time along said ray a time equal to the product of slope (p_x) of the cylindrical wave by the abscissa of the source point ; d) repeating stages b) and c) for all the positions of the receivers for which a demigration result is wanted ; and e) repeating stages a) to d) for all the acquisition lines for which a demigration result is wanted and for all the values taken by parameter (p_x).

- Applications : migration velocity analysis for determination of the propagation velocities distribution of seismic waves in the subsoil for example.